

**Monograph of Cimicidae.** Robert L. Usinger (with sections by Jacques Carayon, Norman T. Davis, Norihiro Ueshima and Harley E. McKean). The Thomas Say Foundation, Entomological Society of America, 7, xi + 585 pp., illus., 1966.

This extremely useful work represents a truly collective effort. The general and taxonomic sections written by Usinger, and which occupy the largest part of the work, are complemented by chapters by other authors. The most noteworthy contributions are those on "Traumatic insemination and the paragenital system" by J. Carayon, and "Cytology and cytogenetics" by N. Ueshima. The structure of the spermalege (composed mainly of what was known formerly as the "organ of Ribaga" and "organ of Berlese") and cytological data have been taken into account by Usinger for the construction of his system of the cimicids.

The family is now divided into six subfamilies arranged in 22 genera and 74 species. The Primiciminae, the most primitive subfamily is represented by two genera, both bat parasites: *Primicimex* in Texas and Guatemala, and the recently discovered Chilean *Bucimex*. The latter is somewhat transitional to the next subfamily. The Cimicinae which contains two parasites of man, *Cimex lectularius* and *Cimex hemipterus*, has holarctic, eastern Asian, and South American genera; they occur on bats and birds. There are five precinctive North American species of *Cimex*. The subfamily Cacodminae, with six genera, is restricted to the Old World tropics. The African *Leptocimex boueti* will attack man, but this species, like all others in the subfamily, is normally parasitic on bats. Afrocimicinae is a monotypical African subfamily. *Afroximex* occurs on bats in caves; the males are unique in having functional paragenital openings, viz. a distinctly developed spermalege, with frequent signs of copulation. The monotypical Latrocimicinae is found on fishing bats on Trinidad and in Brazil. The Haematosiphoninae is distributed over the Western hemisphere. Five of the seven genera are monotypic, and all are parasites of birds. *Ornithocoris pallidus* is found in Brazil and in the southeastern United States; the other North American genera are *Cimexopsis*, *Synxenoderus* and *Hesperocimex*.

The careful descriptions or redescriptions of all subfamilies, genera and species are accompanied by excellent line drawings, mostly by the late Gordon Floyd Ferris, and by Celeste Green. Keys are given not only for adults, but also for fifth and first instar nymphs, and even for the eggs of some species. Abundant data on morphology, biology, host relationship, and even linguistics, are complemented by an extensive bibliography.

This is not only a synopsis of an important group of parasites, but also a readable and at times fascinating book.

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